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prepossessions in the case, they should be that the changes are real in the stars themselves. And when we reflect on the habitual caution of long experienced observers, men whose very existence is devoted to the accurate delineation of fact, we should place a high reliance on their recorded observations, and not think that they have lightly allowed themselves to be imposed upon by optical illusions.

I cannot hope to be able to add anything to the knowledge of practised observers respecting the sources of error and the rules to be observed in making observations; but as these have never, that I am aware, been embodied in print, I offer the following, chiefly for the assistance of the many who may be disposed so observe the larger stars with the naked eyes. Such stars are indeed very few, but the observations may be the more useful from being made frequently and by many persons.

1. Damp and slightly hazy atmospheres make a green star appear blue. This may be from the same principle that the deep ocean, the clear sky, and the distant mountains appear blue. Damp nights that are perfectly clear do not have this effect.

2. Moonlight greatly obscures the colors of the stars, giving them a yellowish hue.

3. Before the daybreak makes its appearance in the east, the rays of the sun refracted through the higher regions of the atmosphere, may cause a general whiteness of the stars.

4. Artificial lights reaching the eye obscure the colors of the stars.

5. On account of the faintness of the light of the stars, the eye often requires to be fixed upon them for a considerable time before their impressions take full effect.

6. Comparisons between neighboring stars, and some practice in star observations, are often necessary to decide on the real colors of the stars.

7. The atmosphere must have like effects upon similar stars in the same neighborhood. Hence a peculiarity observed in any star may be brought to a determination.

8. Observations on the same star during a considerable interval of time and through different changes of weather, may aid in giving confidence to a determination.

9. Perfect independence and candor are necessary. Our previous judgments are apt to warp these delicate impressions on the retina, and whether we have derived these judgments from ourselves or others, we must be careful to lay them completely aside. For want of doing this we may not notice a change of color, although such a change may have been before our vision.

10. Personal peculiarities of vision may be ascertained by consultation with others.

11. Discrepancies between the accounts of two observers may arise from differences of dates; hence, in apprehension of sudden and frequent changes in the stars, the dates of observations should be carefully given.

Description of a new Labroid Genus allied to *TROCHOCOPUS* Gthr.

BY THEODORE GILL.

Dr. Ayres has indicated, under the name *Labrus pulcher*, a Californian representative of the family of Labroids. That species was subsequently referred by Dr. Günther to his genus *Semicossyphus*, in which it was retained by myself with the proviso that "its generic position remains to be confirmed, although there is little doubt that it really is a *Semicossyphus*." Having since received, through the kindness of Dr. Cooper, a specimen of the species, I find that it has not the "lateral teeth distinct," as in *Semicossyphus*, but an "obtuse osseous ridge round the edge of the jaws, without distinct lateral teeth," as in *Trochocopus* Gthr., to which Günther should have referred it. I am not acquainted with his reasons for considering the species closely 1864.]

related to the type of *Semicossyphus*, out previously followed him, as he was acquainted with *Semicossyphus* and *Trochocopus* through autopsy, while I was not.

Genus PIMELOMETOPON Gill.

Synonymy.

Labrus sp. *Ayres*.

Semicossyphus sp. *Günther, Gill*.

Body oblong, moderately compressed, with the caudal peduncle little oblong and not constricted: anus subcentral.

Scales generally rather small, in about fifty-five to sixty-five transverse rows; on the breast smallest: each scale is oblong, subangulated behind, little convex or truncated at base, corrugated at the centre, with numerous lines radiating backwards towards the base and sides; and in front with generally undulated lines parallel with the sides; exposed surface vertically rhomboid.

Lateral line continuous, simply tubular, parallel with the dorsal outline, little decurved backwards, and not at all deflected.

Head nearly equally long and high, with the snout elongated and decurved. Eyes submedian between the snout and opercular margin or little anterior, rather small. Cheeks covered with small scales; larger ones on all the opercular bones, except the preoperculum, whose limbs are naked. Opercular bones unarmed; suboperculum with no membranaceous extension. Nostrils minute, simple, in front of the upper portion of the eye.

Mouth little protractile, with the cleft oblique. Lips thick and plicated.

Intermaxillary and supramaxillary bones connected by arthrodial articulation; intermaxillaries with the ascending processes about as long as the horizontal and extending nearly to the eyes, little curved and oblong cuneiform in profile for two-thirds of their length, oblong subtriangular behind; the horizontal limbs uniformly wide, thick but compressed, and with a prominent articulation behind. Supramaxillars divided into two parts; an anterior laminar behind and within the posterior part, widening towards the front into a somewhat concave or channeled process arthrodially articulated with the outer surface of the intermaxillars, and thence recurrent in a nearly parabolic curve backwards and thence downwards to the front to articulate with the inner surface of the intermaxillars; the posterior portion of the supramaxillars is flat and expanded backwards towards its inferior angle, and ceases nearly under the front of the eye. Dentary rapidly increasing in height towards the angle.

Teeth on the crest of the jaws cylindro-conic and obtuse, completely isolated; four in front of the jaws developed as large curved blunt canines; the hindermost one in jaw above sometimes little larger than the preceding; in others a true canine:* on the *inner surface* of the jaws, granular and pluriserial.

Branchiostegal rays seven (in *Pimelometopon Darwinii* fide Val.

Dorsal fin with no scales, entire, commencing rather behind the bases of the pectoral fins; typically with twelve spines and ten rays; the spinous portion nearly uniform, rather low, and with each spine enveloped in a membranaceous produced sheath; the soft portion falciform, produced at its anterior portion.

Anal fin with three graduated spines, and with its soft portion opposite and similar to that of the dorsal.

Caudal fin typically lunate and with prolonged pointed lobes.

Pectoral fins rather narrow, obliquely truncated behind.

Ventral fins inserted beneath or scarcely behind the pectoral and angulated.

D. XII. 10. A. III. 12.

Scales 58—62.

The lower pharyngeal bone is T-shaped, divided into two parts; the body

*Is the development of a posterior canine tooth a sexual distinction in this genus?

transversely triangular, scarcely sinuous behind and uniformly high, with its ends scarcely curved backwards to its posterior facettes, which are narrow, little prominent above and separated from the dentigerous area by a contraction; the shaft is laminar, expanded obliquely downwards and forwards. The teeth on the body are nearly uniform, moderate, and paved, and on the crest of the shaft obtusely cylindro-conic. The upper pharyngeal bones are high, curved in front, on which is a tessellated pavement and which is nearly rectangular to the inferior surface, which is paved towards the inner side with moderate and towards the outer with minute teeth.

The gill rakers on the outer surface of the first branchial arch are short compressed, parallel with the arch, bi- or multidentate; the others are oblique and more or less compressed at right angle to the arches.

Type Pimelometopon pulcher Gill.

This genus is very closely related to *Trochocopus* (Günther), but differs in the possession of a greater number of scales and the form of the head. It is also solely represented by species found along the western coasts of America and the appertaining islands, while *Trochocopus* is a peculiar African type, so far as yet known.

Of the two known species of this genus, one—the type—was originally described as a *Labrus* by Ayres in San Francisco; the other was first made known by Jenyns under the generic name *Cossyphus* and was afterwards, by Valenciennes, described as a new species of *Labrus*. Dr. Günther subsequently referred the Californian species to his genus *Semicossyphus* and the species of Jenyns and Valenciennes to *Trochocopus*; he was acquainted with neither through autopsy. Finally, the writer, following Günther and unacquainted with either *Semicossyphus* or *Trochocopus*, retained the Californian species in the former genus.

Pimelometopon belongs to the subfamily of Chæropinæ as understood by me. It is proper to here remark that, by an evident inadvertence, the subfamily Pseudolabriformes of Bleeker was formerly* enumerated among those considered valid by myself, instead of among those requiring revision.

There are two known species of the genus *Pimelometopon*:

PIMELOMETOPON PULCHER Gill = *Labrus pulcher* Ayres = *Semicossyphus pulcher* Günther, Gill.
California.

PIMELOMETOPON DARWINII Gill = *Cossyphus Darwinii* Jenyns = *Labrus aper* Val.

Galapagos Islands.

N. B. In anticipation of a special paper, I may here state that the *Sebastes helvomaculatus* of Ayres is the true *Sebastes rosaceus* of Girard, (*Sebastomus*† *rosaceus* Gill,) widely different from the *Sebastodes*! *rosaceus* of Ayres. The latter may be named *Sebastosomus pinniger*.

Note on the Nomenclature of Genera and Species of the Family ECHENEIDOIDÆ.

BY THEODORE GILL.

In order to correct the nomenclature of two of the genera of the family Echeneidoideæ, the following paper is submitted. I also embrace the opportunity of restoring to proper rank, as the true names of peculiar species, two which have been connected with forms to which they do not truly belong.

M. Auguste Duméril, in a "Prodrome" of a projected Monograph of the family, (*Comptes Rendus*, tome 47, 1858, pp. 374—378,) has proposed to distribute the species among two groups, one typified by *Echeneis nuucrates*, and named *Naucrates*, and the other, represented by *E. remora* and called *Remores*. Elevating these types with others to independent generic rank, I

* Proc. A. N. S. 1863, p. 221.

† *Sebastosomus*, n. g. Type *Sebastosomus melanops* = *Sebastes melanops* Girard.